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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,115	04/02/2001	Ralph C. Sparling	271	9184
7590	02/06/2004		EXAMINER	
Seymour Levine 9B Weavers Hill Greenwich, CT 06831			TRAN, HIEN THI	
			ART UNIT	PAPER NUMBER
			1764	
DATE MAILED: 02/06/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,115

Applicant(s)

SPARLING ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-27 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to a catalytic converter, classified in class 422, subclass 180.
 - II. Claims 21-27, drawn to a method for converting pollutants in a fluid, classified in class 423, subclass 210+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, such as the process of manufacturing a chemical compound, or hydrogenation process.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, recognized divergent subject matter and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Seymour Levine on 01/30/04, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "21" (Fig. 3); 31 (Fig. 4). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

Specification

8. The disclosure is objected to because of the following informalities:

On page 1, the status of the parent application should be updated.

On page 6, line 35 it is unclear as to what catalyst is considered a low temperature, non-ionizing radiation-activated catalyst.

On page 7, line 3 it is unclear as to what type of heating means is considered a radiation source.

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Appropriate correction is required.

9. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 19-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, a specific type of radiating element is nowhere disclosed in the specification.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 11, 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, line 2 "said first and second sections" have no clear antecedent basis.

In claim 15, it is unclear as to whether the external source is a part of the catalytic converter.

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In claim 16, it is unclear as to what structural limitation applicants are attempting to recite and whether the combustion "process" is a part of the catalytic converter. See claims 17-18 likewise.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-2, 4-6, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ernest et al (4,426,320).

With respect to claims 1-2, 15, Ernest et al discloses a catalytic converter comprising: a reticulated ceramic foam having internal voids providing a high internal void volume and a high internal surface area; and a catalyst coating containing at least one transition metal on the internal surface area, thereby creating a catalyst coated reticulated foam (col. 2, lines 4-68; col. 3, line 38 to col. 4, line 45).

With respect to claims 4-6, Ernest et al discloses that the catalyst comprises noble metal of platinum group or a mixture thereof (col. 3, line 59 to col. 4, line 10).

With respect to claims 15-17, Ernest et al further discloses that the catalyst foam is constructed and arranged to receive energy by an external source, e.g. combustion (col. 1, line 17-20; col. 5, lines 56-63).

Instant claims 1-2, 4-6, 15-17 structurally read on the apparatus of Ernest et al.

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16. Claims 1-2, 7, 9, 11, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Rao et al (4,744,216).

With respect to claims 1-2, Rao et al discloses a catalytic converter comprising: a reticulated ceramic foam C having internal voids providing a high internal void volume and a high internal surface area; and a catalyst coating containing at least one transition metal on the internal surface area, thereby creating a catalyst coated reticulated foam (col. 4, line 44 to col. 5, line 26).

With respect to claims 7, 14, Rao et al discloses that the catalyst coated reticulated foam is constructed to include an electrical heating element 42 embedded within the foam (col. 5, lines 29-47).

With respect to claims 9, 11, note the sections and heating elements therebetween in Fig. 2 of Rao et al.

Instant claims 1-2, 7, 9, 11, 14 structurally read on the apparatus of Rao et al.

17. Claims 1-2, 6, 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Usui et al (4,549,399).

With respect to claims 1-2, 15, Usui et al discloses a catalytic converter comprising: a reticulated ceramic foam having internal voids providing a high internal void volume and a high internal surface area; and a catalyst coating containing at least one transition metal on the internal surface area, thereby creating a catalyst coated reticulated foam (col. 3, lines 1-31; col. 3, line 56 to col. 4, line 7).

With respect to claim 6, Usui et al discloses that the catalyst comprises noble metal of platinum (col. 3, lines 1-3, 13-16).

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With respect to claims 15-18, Usui et al further discloses that the catalyst ceramic foam is constructed and arranged to receive energy by an external source, e.g. combustion (col. 1, lines 56-62; col. 4, line 19-48, Fig. 1).

Instant claims 1-2, 6, 15-18 structurally read on the apparatus of Usui et al.

18. Claims 1-6, 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki et al (5,158,448).

With respect to claims 1-2, Kawasaki et al discloses a catalytic converter comprising: a reticulated ceramic foam 8 having internal voids providing a high internal void volume and a high internal surface area; and a catalyst coating containing at least one transition metal on the internal surface area, thereby creating a catalyst coated reticulated foam (col. 7, lines 55-56).

With respect to claim 3, Kawasaki et al discloses a fluid guide and a fan (Fig. 4).

With respect to claims 4-6, Kawasaki et al discloses that the catalyst comprises noble metal of platinum group or a mixture thereof (col. 11, lines 27-30).

With respect to claims 15-20, Kawasaki et al further discloses that the catalyst ceramic foam is constructed and arranged to receive energy by an external source, e.g. combustion, radiating element (col. 1, lines 56-62; col. 4, line 19-48, Fig. 1).

Instant claims 1-6, 15-20 structurally read on the apparatus of Kawasaki et al.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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20. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

22. Claims 8, 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al (4,744,216).

With respect to claim 8, Rao et al discloses that the heating elements are coupled with a control and sensor (col. 5, lines 50-68).

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It would have been obvious to one having ordinary skill in the art to alternatively select an appropriate means for controlling the heating element since such a modification would have involved a mere substitution of known equivalent structures. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

With respect to claims 10, 12, Rao et al does not explicitly disclose the specific shape of the heating element, however, such is inherent therein as evidenced by Fig. 2. In any event, the shape of the heating element is not considered to confer patentability to the claim. It would have been an obvious matter of design choice to select an appropriate shape for the heating element, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With respect to claim 13, since the heating element of Rao et al is embedded within the foam, it apparently has the same catalyst coating as the foam. Even if not, it would have been obvious to one having ordinary skill in the art to provide the same catalyst coating on the heating element so as to increase the catalytic purification of the system thereof.

Double Patenting

23. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).


24. Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,237,587. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are directed to the same conceptual invention.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



HT
January 30, 2004

Hien Tran
Primary Examiner
Art Unit 1764